Lowell, J. David and Edith
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January 14, 2004

via FAX and First Class Mail

Jerry Pell, Ph.D., CCM
NEPA Document Manager
Fossil Energy FE 27
U.S. Department of Energy
Washington, DC 20585

Re: Tucson Electric Power Company Sahuarita-Nogales Transmission Line Draft Environmental Impact Statement (DOE/EIS-0336)

Dear Dr. Pell:

1 We urge the adoption of the preferred alternative (the most western route for the power line). We operate a ranch with a grazing Permit in the Coronado National Forest in Santa Cruz County, Arizona, and feel that both the Crossover and Central Corridors will
2 adversely impact management of this permit. The natural gas line passes through our ranch pastures, and if it were to be significantly widened to accommodate the power line that would cause a damaging loss to our pastures and forage available. The gas line at
3 present serves as an easy route and compass northward for heavy illegal and dope smuggling traffic. Widening that corridor would probably increase this illegal use. We feel that the most western route through the mountains would cause the least disruption to
1 local communities.
cont.

We hope you will consider our comments in your final draft of the EIS.

Sincerely,

J. David and Edith Lowell

Comment No. 1

The Federal agencies note the commentor's preference for the Western Corridor because it would cause the least disruption to the local communities.

Comment No. 2

The issuance of authorization by USFS would be coordinated with other special use permits on the Coronado National Forest.

Relative to land use, the purpose of an EIS is not to determine the compatibility of the proposed project with specific adjacent land uses, but to disclose the potential impacts to land use that would result from the proposed project and determine the overall compatibility with land use plans. The Final EIS has been corrected to clarify that the EIS focuses on the potential impacts to land use that would result from the proposed project and determine the overall compatibility with land use plans. In addition, Section 4.1, Land Use, of the Final EIS has been revised to clarify potential impacts on commercial, residential, and other land uses in the project area.

TEP has not finalized the placement of the 125-ft (38-m) ROW within the 0.25 mi (0.40 km)-wide study corridors. If an action alternative is selected for implementation by each of the Federal agencies through the issuance of a ROD, then precise siting of the ROW and the support structures within the ROW would involve input from cultural, biological, and visual specialists, to identify and minimize impacts to each area of land to be disturbed.

Comment No. 3

The Federal agencies have revised Sections 4.1.1, Land Use; Section 4.12, Transportation; and Chapter 5, Cumulative Impacts of the Final EIS based on the U.S. Border Patrol's response (USBP 2004) to the Federal agencies' request regarding illegal immigration and law enforcement activities in the proposed project vicinity. The U.S. Border Patrol's response generally re-enforced the information on which the relevant analysis in the Draft EIS was based. The U.S. Border Patrol stated that the roads associated with the construction and maintenance of the proposed project would contribute to an increase in illegal immigrant and

Comment No. 3 ***(continued)***

narcotic smugglers in the area and affect U.S. Border Patrol operations. The effects of these activities are reflected in the Final EIS in the sections listed above.

Magruder, Lucy
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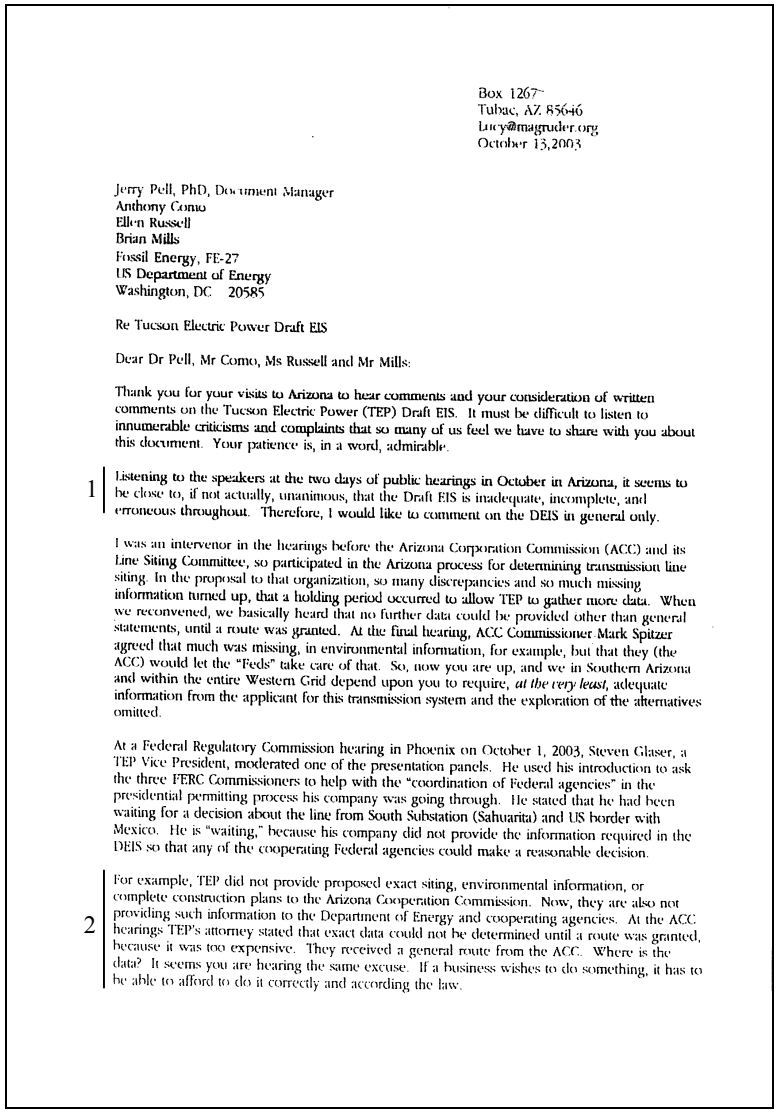

Box 1267
Tubac, AZ 85646
Lucy@magruder.org
October 13,2003

Jerry Pell, PhD, Document Manager
Anthony Como
Ellen Russell
Brian Mills
Fossil Energy, FE-27
US Department of Energy
Washington, DC 20585

Re Tucson Electric Power Draft EIS

Dear Dr Pell, Mr Como, Ms Russell and Mr Mills:

Thank you for your visits to Arizona to hear comments and your consideration of written comments on the Tucson Electric Power (TEP) Draft EIS. It must be difficult to listen to innumerable criticisms and complaints that so many of us feel we have to share with you about this document. Your patience is, in a word, admirable.

1 Listening to the speakers at the two days of public hearings in October in Arizona, it seems to be close to, if not actually, unanimous, that the Draft EIS is inadequate, incomplete, and erroneous throughout. Therefore, I would like to comment on the DEIS in general only.

I was an intervenor in the hearings before the Arizona Corporation Commission (ACC) and its Line Siting Committee, so participated in the Arizona process for determining transmission line siting. In the proposal to that organization, so many discrepancies and so much missing information turned up, that a holding period occurred to allow TEP to gather more data. When we reconvened, we basically heard that no further data could be provided other than general statements, until a route was granted. At the final hearing, ACC Commissioner Mark Spitzer agreed that much was missing, in environmental information, for example, but that they (the ACC) would let the "Feds" take care of that. So, now you are up, and we in Southern Arizona and within the entire Western Grid depend upon you to require, *at the very least,* adequate information from the applicant for this transmission system and the exploration of the alternatives omitted.

At a Federal Regulatory Commission hearing in Phoenix on October 1, 2003, Steven Glaser, a TEP Vice President, moderated one of the presentation panels. He used his introduction to ask the three FERC Commissioners to help with the "coordination of Federal agencies" in the presidential permitting process his company was going through. He stated that he had been waiting for a decision about the line from South Substation (Sahuarita) and US border with Mexico. He is "waiting," because his company did not provide the information required in the DEIS so that any of the cooperating Federal agencies could make a reasonable decision.

2 For example, TEP did not provide proposed exact siting, environmental information, or complete construction plans to the Arizona Cooperation Commission. Now, they are also not providing such information to the Department of Energy and cooperating agencies. At the ACC hearings TEP's attorney stated that exact data could not be determined until a route was granted, because it was too expensive. They received a general route from the ACC. Where is the data? It seems you are hearing the same excuse. If a business wishes to do something, it has to be able to afford to do it correctly and according the law.

Comment No. 1

The Draft EIS was prepared in accordance with Section 102(2)(c) of NEPA, the Council of Environmental Quality (CEQ) regulations (40 *Code of Federal Regulations* [CFR] Parts 1500-1508), and all other applicable laws and regulations. The Federal agencies have determined that the Draft EIS does not need to be recirculated for additional review.

Comment No. 2

The level of detail provided by TEP on the proposed project is adequate for the Federal agencies to conduct an environmental analysis of the proposed project per NEPA requirements. TEP has not finalized the placement of the 125-ft (38-m) ROW within the 0.25 mi (0.40 km)-wide study corridors. If an action alternative is selected for implementation by each of the Federal agencies through the issuance of a ROD, then precise siting of the ROW and the support structures within the ROW would involve input from cultural, biological, and visual specialists, to identify and minimize impacts to each area of land to be disturbed. The detailed engineering and design of the proposed project would be completed after the final siting of the corridor. For this reason, the Final EIS cannot include maps showing a precise location for the ROW or the individual support structures.

Comment No. 3

Because the Federal agencies cannot anticipate how the ACC may adjust consumer electricity rates in light of the proposed project, the potential change in consumer electricity rates is too speculative for inclusion in the EIS.

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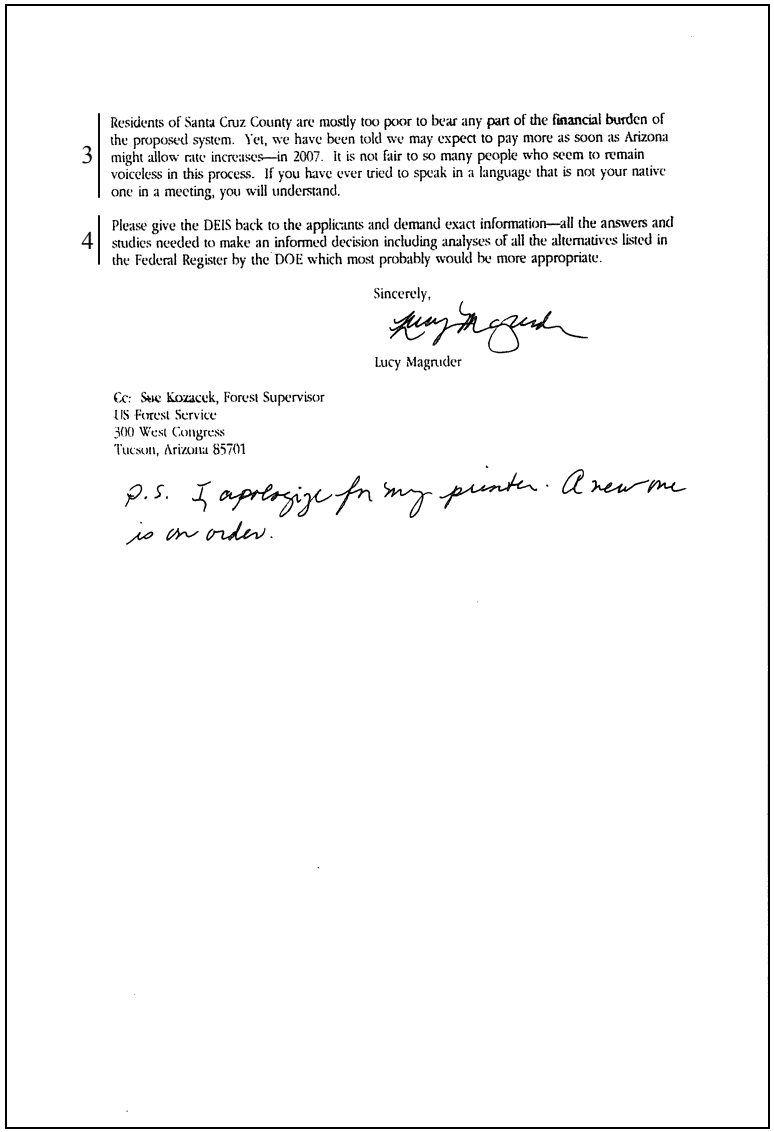

3 Residents of Santa Cruz County are mostly too poor to bear any part of the financial burden of the proposed system. Yet, we have been told we may expect to pay more as soon as Arizona might allow rate increases—in 2007. It is not fair to so many people who seem to remain voiceless in this process. If you have ever tried to speak in a language that is not your native one in a meeting, you will understand.

4 Please give the DEIS back to the applicants and demand exact information—all the answers and studies needed to make an informed decision including analyses of all the alternatives listed in the Federal Register by the DOE which most probably would be more appropriate.

Sincerely,

Lucy Magruder

Cc: Sue Kozacek, Forest Supervisor
US Forest Service
300 West Congress
Tucson, Arizona 85701

P.S. I apologize for my printer. A new one is on order.

Comment No. 3 ***(continued)***

In order to include public participation from the Hispanic population that may be impacted from the proposed project, factsheets and public meeting announcements were provided in Spanish.

Comment No. 4

The alternative of constructing a new power plant in Nogales is not a viable alternative to a new, second transmission line (part of TEP's proposal). Therefore, the alternative of a new power plant is not evaluated in detail in this EIS (refer also to Section 2.1.5, Alternatives Considered But Eliminated From Further Analysis).

Magruder, Marshall
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Comments at Green Valley by
Marshall Magruder
PO Box 1267, Tubac AZ, 85646, 520-398-8587

Thursday 3-5 PM, 25 September 2003

Good Afternoon, Mr. Como, Dr. Pell.

As you are probably aware, I will have many comments on the version of the DOE's Draft EIS. I would like to discuss one primary Issue during this session, during the five-minutes allowed, and some related issues, that is, TEP's South Substation, the northern terminal for this proposed project.

Your Federal Register Notice of 10 July 2001, provided the DOE's EIS requirements and started this process. It specifically required that a "floodplain analysis" be provided in the draft EIS. Appendix C contains this response, along with the other required analysis, for wetlands.

First, on page C-10 and during ACC Siting Committee testimony, TEP freely acknowledges that this facility is within the 100-year floodplain. It further gives some requirements that have to be met for a

1 100-year floodplain.

The proposed TEP project has a capacity for 1,000 MW per circuit for a total capacity of 2,000 MW even through the initial operational limits will be 500 MW. This is a 2,000 MW system and can carry 2,000 MW. On August 12, 2003, TEP experienced a new record peak demand day at 2060 MW. Thus, this facility will have the capability to meet all of Tucson's load demands. Under any and all floodplain definitions, TEP's South Substation exceeds the minimum requirements to be designated as a Critical Facility.

Floodplain analysis for Critical Facilities require review at the 500-year levels, not the 100-year levels used in this Appendix. Thus, **this analysis is thus erroneous and fails a fundamental test. On this one issue alone, it must be resubmitted for review**.

Now for some additional failures in Appendix C:

2 1. Page C-1, "**because the final siting and engineering of the transmission line has not been completed, alternatives** that specifically address **floodplain/wetland impacts have not been developed**. Therefore, measures to avoid or minimize wetland impacts can only be discussed in **general terms**."

- Comparison of Alternatives is required for a floodplain and wetland analyses?
- Again, **this analysis is incomplete**.

3 - As TEP is aware, on 5 August 2003, they filed with the Arizona Corporation Commission a document which discussed this project and stated "that some agencies involved in the EIS process have said that they will not comment on specifics of the Project until they are

Marshall Magruder Comments on DOE's Draft EIS for the TEP's Proposed Transmission Line Project, 25 September 2003, Green Valley, 3-5 PM page 1 of 4

Comment No. 1

The Federal agencies concur that the proposed project should be treated as a critical facility, and have revised the Floodplain/Wetlands Assessment in Appendix C to identify and evaluate impacts to the 500-year floodplain. The Floodplain/Wetlands Assessment includes evaluation of the same alternatives evaluated in detail in the EIS (Western, Central, and Crossover Corridors, and the No Action Alternative). Specific alternatives (i.e., mitigation measures) for addressing floodplain/wetland impacts would be developed upon final siting and engineering of the transmission line.

Comment No. 2

Refer to the response to Comment 1 above regarding the alternatives evaluated and the development of mitigation measures. The final siting and engineering of the transmission line has not yet been completed and alternatives that specifically address floodplain/wetland impacts have not yet been developed. A final Floodplain/Wetlands Assessment would be conducted once the final siting of the transmission line has been determined, and if the Federal agencies determine that there is no alternative to implementing the proposed project in a floodplain then a brief statement of finding would be prepared (see Appendix C of the Final EIS). The potential floodplain impacts in Mexico are not presented in the EIS because the EIS only analyzes potential environmental impacts in the United States.

Comment No. 3

The commentor is correct that some agencies, such as USACE and USFWS, will not take further action on this project until a corridor and/or precise alignment is selected for implementation. However, DOE and the cooperating agencies preparing this EIS will select from among the alternatives evaluated in the EIS in their ROD.

TEP has not finalized the placement of the 125-ft (38-m) ROW within the 0.25 mi (0.40 km)-wide study corridors. If an action alternative is selected for implementation by each of the Federal agencies through the issuance of a ROD, then precise siting of the ROW and the support structures within the ROW would involve input from cultural, biological, and visual specialists, to identify and minimize impacts to each area of land to be disturbed.

Magruder, Marshall
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provided with a final location by either the DOE or the U.S. Forest Service."[1] Thus, **without final siting and engineering**, this EIS will never be approved. TEP testified this would take 3 months during the ACC Line Siting Committee hearings. Further, the case, cited below, was in response to a Settlement Agreement that required Citizens (now UniSource Energy Services) to follow a Plan of Action which called for completing the EIS prior to obtaining their ACC CEC permit. TEP did not follow that agreement.

3 cont.
- When is TEP going to determine where each pole, each tower, each fiber-optic splicing station, each lay-down yard, and so forth, going to be LOCATED. They have had over 3 years for a 3-month effort. With "final" siting, then just a few things might have to be moved, slightly, but its' their continual failure to do professional work that has been a significant concern for all parties.
- **Why should ANY federal, state, tribe, county, city, town or other agency approve or agree to facilities which have yet to be SITED?**
- **Without a siting, these analyses are, at best, useless.**
- **Let me show you an example of an EIS which "sites" facilities**. This just one of four books in the EIS for a wastewater treatment plant for Ambos Nogales, both sides of the border, like this TEP project entails.

2 cont.
- **Note that each manhole cover is located, in US and MEXICO, in these sheets.**
- **Where are the floodplain impacts in Mexico?**

2. A bit lower on page C-1, it states "**IF DOE determines that there is no Alternative** to implementing a proposed project in a floodplain, a **brief statement must be prepared**."

4
- It's not too hard to find Alternatives: (1) a New Substation. or (2) TEP's Cypress Sierrita SUBSTATION, which these transmission lines bypass, to the west of the Green Valley mines. Obviously out of the floodplain, and for reasons below, better for the Town of Sahuarita and Green Valley.
- Why is this statement not included in the EIS (no final locations)?
  - **Where are these Alternatives?**

3. A FLOODPLAINS ASSESSMENT requires Public Notices so governmental agencies and parties can participate.

5
- When with this be issued?
- When will these public hearings be held? Suggestion, please complete this process prior to resubmitting another draft EIS.

[1] See ACC Docket No. E-1032A-00-0401, "Joint Application for delay of the in-service deadline or, in the alternative, waiver of penalties and for other appropriate relief" at 8, lines 5 to 7.

Marshall Magruder Comments on DOE's Draft EIS for the TEP's Proposed Transmission Line Project, 25 September 2003, Green Valley, 3-5 PM page 2 of 4

Comment No. 4

Section 1.2 of the Final EIS explains the roles of the Federal agencies in developing alternatives for the proposed project. Where an applicant seeks a permit for a particular business project, such as the case with TEP's proposed project, the Federal agencies generally limit their review of alternatives to those that would satisfy the applicant's proposal and decide whether that proposal is or is not worthy of receiving a permit. The Federal agencies do not review alternatives that are not within the scope of the applicant's proposal. Similarly, the agencies do not direct the applicant to alter its proposal; instead, the agencies decide whether a permit is appropriate for the proposal as the applicant envisions it. It is not for the agency to run the applicant's business and to change the applicant's proposal, but only to evaluate the environmental effects of the applicant's business proposal as offered.

The alternatives suggested by the commentor do not meet TEP's purpose and need, part of which is to connect to the existing electrical grid at the South Substation. TEP's Cyprus-Sierrita Substation cited by the commentor is on a lower voltage system and would not support the proposed transmission line.

Comment No. 5

The "Notice of Intent to Prepare an Environmental Impact Statement (EIS) and to Conduct Public Scoping Meetings and Notice of Floodplain and Wetlands Involvement" for the proposed project was published in the *Federal Register* (66 FR 35950) on July 10, 2001. By including the Floodplain and Wetlands Involvement in this Notice of Intent, and taking public comments on the entire Draft EIS (including the Floodplain/Wetlands Assessment in Appendix C), the Federal agencies fulfilled the requirements of DOE's regulations for "Compliance with Floodplain/Wetlands Environmental Review Requirements" (10 CFR Part 1022).

Magruder, Marshall
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- What's that status on Clean Water Act, Section 401 and 404 reports? Why aren't they available in this draft EIS for agency and public review? Suggestion, complete the design, do the analysis, then include results in the EIS, 6

4. On page C-2, an additional 100 feet to the Southeast, equating to 58.600 square feet (100x586) could be added to South Substation **about 70 feet closer to the Santa Cruz River**. This is for a 500 MW bay. In addition, there is another 500 MW bay (future) shown in the Figures from the ACC Application, Exhibit G-1.1.
   - Where will the **additional 1,000 MW bays be located and associated 1,000 MW or more of transmission lines to use the 2,000 MW of power?** 7
   - Why are there no such diagrams for South, Gateway and Valencia Substations in this proposed draft EIS?
   - NO TECHNICAL figures are in this appendix, none have been reviewed by a **Registered Professional Civil Engineer**, as no "approved" stamps are shown. Please ensure all such figures have reviewed by a competent engineer.

5. On pages C4 to C-7, are Figures 2 to 5. These are the 100-year floodplain maps. In this format, they are unacceptable. They are cartoons, not useful for any analysis.
   - **Where are the "contours" like the map I provided DOE on this subject during the Scoping Meetings over 2 years ago?** That's what's necessary. 8
   - **Topographic maps are what are missing throughout this report.**

6. On page C-4, Figure 2 – this shows the "approximate boundary" of South Substation.
   - Show the real boundary of this present facility.
   - Why are there no photographs showing the pre- and post-construction impacts at South Substation? 9
   - Related, why are there no photographs of Sahuarita, for example, a photograph from the I-19 bridge at Pima Mine Road would show what the residents of Sahuarita will see everything they come home and all gamblers at the new Tohono O'odham Casino.

7. On page C-6, Central Corridor.
   - This fails to show the correct Central Corridor Segment 9, in the vicinity of Tubac, where the Eastern Segment 10 continued along the natural gasline. Segment 9 is described in the Federal Register as Central Route. See DOE maps and Exhibits from TEP's ACC application for maps for correct Central alignment. 10

8. On page C-7, Gateway Substation.
   - This shows an outline of Gateway Substation, suggest using updated Exhibits G-1.2 and G-1.3 from TEP's ACC Application, which show substation landscape and revegetation plan. 11
   - Where is the revegetation plan for South Station and along the routes in the Town of Sahuarita?

Marshall Magruder Comments on DOE's Draft EIS for the TEP's Proposed Transmission Line Project,
25 September 2003, Green Valley, 3-5 PM page 3 of 4

Comment No. 6

Permits or review requirements under Sections 401 and 404 of the *Clean Water Act* (requirements for discharge of dredge or fill material and wetland permit review) are identified in Chapter 10 as potentially applicable to the proposed project. TEP is currently in consultation with USACE on these requirements, and would complete the required studies and obtain the required permits upon final selection of an alternative.

Comment No. 7

The South Substation would be expanded from a "three-breaker ring bus" to a "four-breaker ring bus" (an arrangement of circuit breakers in a substation), with an 100-ft (30-m) expansion to the existing fenceline (see Section 2.2.1, Substation Upgrades and Additions and Fiber-Optic Regeneration Sites). This EIS addresses the development of the proposed project for operation at the 500 MW level, including the required substation additions and modifications. If TEP wanted to operate the proposed 345-kV transmission line above 500 MW, TEP would have to apply to DOE for an amendment to their Presidential Permit, and DOE would have to perform additional analysis required by NEPA.

An EIS is not a detailed engineering design document meant to certify the merits of a project's design, but rather a document that identifies and discloses potential environmental impacts. The level of project design detail required for assessment of potential environmental impacts in an EIS depends upon the degree to which project design details could affect environmental impacts.

Comment No. 8

Due to the scale and the level of detail shown in the figures in Appendix C, topographical lines (lines showing elevation contours of the land) are not included in order to present simplified, user-friendly maps.

Comment No. 9

The Final EIS has been modified to illustrate the South Substation boundary in Appendix C, Figure 2.

Comment No. 10

The information on routes presented during the scoping process is intended to be preliminary in nature and is not intended to be a final determination of routing or topics that ultimately are to be analyzed in the Draft EIS. In fact, one of the stated purposes of scoping is to refine alternatives and issues to be addressed. The analysis that occurred between scoping and publication of the Draft EIS refined the actual Central Corridor to be considered for environmental effects. The Central Corridor is correctly shown in the Draft EIS.

Comment No. 11

Exhibits G-1.2 and G-1.3 from TEP's ACC Application were not added to Figure 5 of Appendix C because Figure 5 depicts the 100-year floodplain relative to the corridor alternative, and revegetation plan for the South Substation would not contribute useful information to the figure. As stated in Section 2.2.1 of the EIS, the South Substation would be revegetated with native plants, leaving a 10-ft (3-m) clear zone around the outside perimeter of the fence for safety and security personnel.

Magruder, Marshall
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Comments at Green Valley by
Marshall Magruder
PO Box 1267, Tubac AZ, 85646, 520-398-8587

Thursday 7-9 PM, 25 September 2003

Good Evening, Mr. Como, Dr. Pell.

I have many comments to make on this proposed draft DOE EIS for the TEP Transmission Line Project. I'd like to address one major area, which involves "VISIBILITY"

This report indicates that TEP's preferred route, the Western Route, is "shielded from Interstate 19) as shown in Figure 4.2-3, so that the Western Route in "NOT visible from Travelway" It shows "green" from Green Valley about half-way to Amado. What happens to I-19 in that stretch is that it's in the valley, next to the western rise. Thus, visibility from that location is only the hill.

Lets talk this figure from North to South.

All this visibility analysis considers is Interstate I-19.

From West Pima Mine road, to about Sahuarita Road (Exit 75), "wide open views of ALL Corridors (**RED**). This impacts the second fastest growing community in Arizona, the Town of Sahuarita. What is the loss of property values due to this line in that community?

From Sahuarita Road to mid-Sahuarita, partially to 'Not visible" (Green) which is blocked from I-19, but **NOT from visibility considerations for those who live at McGee's Ranch areas**. TEP's not too worried here, they will just use eminent domain and condemn these peoples homes and require them to move elsewhere. 1

In the vicinity of southern Sahuarita and northern Green Valley, the mine tailings do shield these lines.

What's most significant from Green Valley is that almost all the new construction is happening **south** of the mine tailings. These homes are on the top of the ridge, and ALL will see the transmission line. Use of I-19 **"travelway" is the wrong choice here**.

How will these "future" homeowners be compensated?

Who will compensate the present developers, whose business plans are impacted, just to improve business for TEP?

All along the Arivaca Road, ranchers and residents west of Amado will have continuous views of the Western Route towers. Further, **Arivaca Road is a designated Scenic Road but it won't be after this system is constructed**. How will this compensated by TEP?

The next figure 4.2-4 was already discounted by all parties at the ACC Line Siting Committee hearings as **not being representative of "scenic sensitivity**." 2

Why? It's nothing but a **population count** to that shows number of residents impacted.

Marshall Magruder Comments on DOE's Draft EIS for the TEP's Proposed Transmission Line Project,
25 September 2003, Green Valley, 7-9 PM page 1 of 2

Comment No.1

In Figure 4.2-3, the map of the Western Corridor is shaded to indicate visibility from travelway. As the Western Corridor crosses I-19 and continues southwest, residents, travelers, and recreationalists would have views of the proposed project in the foreground and middleground, with views from many areas in lower terrain obscured by the hills and main tailings piles in the area (see Section 4.2.2).

The Federal agencies have not attempted to assess potential impacts to property values from the proposed project because it would be speculative.

If implementation of the proposed project requires condemnation of private lands (in the case that an easement agreement cannot be reached with the land owner or manager), such condemnation would be subject to separate legal proceedings which provide due process for those affected.

While there is a potential for construction of new houses on the hills to the west of I-19 and almost anywhere in the project area, until plans are presented, new housing construction is speculative. If such housing construction were to occur, the transmission line may be visible from potential residences on the hills to the west of the interstate, depending on the terrain setting of each individual house.

Comment No. 2

Figure 4.2-4 is based on residential density and topography and depicts one measure of visual assessment. Section 4.2 also presents other figures and visual assessments showing the potential impacts from the proposed project.

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2 cont. For example, the **Central Corridor is LEAST SENSITIVE, with LOWEST IMPACT** from just south of Arivaca Road to Rio Rico. To anyone, the CENTRAL Corridor is most visually sensitive in that area. As TEP testified, oh, you don't have as many people living there, so it's not important to this analysis. **Baloney**.

3 Now, lets look at the poles, the 140 foot tall monopoles in Figure 1.1-1 and the erector set lattice towers in Figure 1.1-2. Why are they so tall? Because they carry 12 conductors, wires for two circuits, two independent circuits. One could have flow going north, another south. Why two? We only need one circuit in Nogales. TEP has NEVER justified any rationale for two circuits for this system. One circuit would reduce structure heights by at least 20 to 30 feet.

4 Color. The "self-weathering" RUST is designed to "look like wood telephone poles" as the color of the monopoles. That works fine in the East or in tall pine forest, maybe redwoods would be even better. As the environmental analysis indicates, this system will not go through those kinds of areas, but where mesquite are 20 or so feet tall, at the highest.

The RUST color has high contrast with blue sky and clouds, which is the background for most viewers of this system. The industry standard is "DULLED, GALVINIZED STEEL". That's what is used as the finish for the lattice towers.

In order, as I've tried throughout this whole process, we should have low-contrasting poles. There is no cost difference, they don't rust from the inside fasters (as recently claimed by TEP in a line siting hearing), and they will reduce the visual impact from about 6 miles to a few miles less.

If there is no justification for a second circuit, then **compact**, smaller DULLED, GALVINIZED STEEL poles are highly recommended, with significantly less visual impact.

I'm sure this would not be considered a significant change by the ACC, so approval should not be difficult.

Marshall Magruder Comments on DOE's Draft EIS for the TEP's Proposed Transmission Line Project,
25 September 2003, Green Valley, 7-9 PM page 2 of 2

Comment No. 3

TEP's purpose and need for the proposed project, as provided to DOE in TEP's Presidential Permit Application, is "…to construct a double-circuit 345 kV, alternating current transmission line to interconnect the existing electrical systems of TEP and Citizens Utilities ("Citizens") in Nogales, Arizona, with a further interconnection to be made from Nogales, Arizona to the CFE transmission system…" In an applicant-initiated process, such as TEP's proposed project, the range of reasonable alternatives analyzed in detail in the EIS is directly related to the applicant's purpose and need.

Comment No. 4

TEP, together with visual, cultural, and biological specialists, would site structures on the landscape so that viewers would see land or vegetation (such as a mountain) behind the structure rather than sky, where feasible (that is, so the structures are not skylined). Thus, the self-weathering monopoles were selected because they would blend better with the background of land or vegetation than gray or silver dulled galvanized steel would.

Magruder, Marshall
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Comments at Nogales
By Marshall Magruder
PO Box 1267, Tubac AZ, 85646, 520-398-8587

Friday 1-3 PM, 26 September 2003

Good Afternoon, Mr. Como, Mrs. Russell.

I have many comments to make on this proposed draft DOE EIS for the TEP Transmission Line Project. I'd like to address one major area, which involves **"RELIABILITY"** this afternoon.

Tuesday's *Nogales International* headlines "Mandated Powerline to Increase Reliability: Environmental Impact Hearings this Week" should be explained in terms that reflect today's current situation.

I'm sorry, but I will have to use a few math and scientific terms, but the "headline" needs to be explained. Our "reliability" has changed several times since 1999, when the ACC ordered a "second" backup transmission line.

Our local electrical system has undergone significant changes since then. This means "old quotes" aren't current or always correct.

The term reliability, used by the National Electricity Reliability Council, has a long non-technical definition, but to be implemented it means that **both** electricity **supply** and **lines** are **available** for customers.

Electricity supply or power availability is measured in Watts. **Reliability engineers** refer **to percent of time a system is available**. Outage is the time it is NOT available. In this case, it is easy for us to convert percent available to the total outage time per year.

"Reliability" requires **BOTH** supply (Watts) and line availability (the time when there is no outage). Without "**supply or wires**," the electrical system is **unreliable**.

Supply (Watts)

Until mid-2002, Santa Cruz County had two supply sources:

(1) **Present 115 kV transmission** line, rated **at 60 MW**, (our "extension cord" to the Western Grid and
(2) **Backup generators** rated at **48 MW** in Nogales, to be used if that line failed, but could augment the transmission line failed. We actually had 108 MW available if both the generators and transmission line were simultaneously supplying power in Santa Cruz County.

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Comment No. 1

The ACC is vested with the state's authority to decide how it believes energy should be furnished within Arizona's borders (for example, the need for and effectiveness of transmission lines within its borders). Refer to the revised text in Section 1.1.2, The Origin of TEP's Proposal: TEP's Business Plan and the Proceedings of the Arizona Corporation Committee, that provides explanation of the jurisdictions and authorities of the state and Federal agencies, and their relationship to this NEPA analysis.

As discussed in section 2.1.5, improvements to the local distribution system (formerly Citizens) do not obviate the need for the proposed second transmission line. The Federal agencies agree that it is the purview of the state to determine the need for and effectiveness of transmission lines within its boundaries.

Comment No. 2

TEP's purpose and need for the proposed project, as provided to DOE in TEP's Presidential Permit Application, is "…to construct a double-circuit 345 kV, alternating current transmission line to interconnect the existing electrical systems of TEP and Citizens Utilities ("Citizens") in Nogales, Arizona, with a further interconnection to be made from Nogales, Arizona to the CFE transmission system…." A smaller transmission line in lieu of the proposed 345-kV line would not meet the international interconnection aspect of TEP's proposal and, therefore, is not evaluated in detail in this EIS (refer also to Section 2.1.5, Alternatives Considered But Eliminated From Further Analysis).

Because the Federal agencies cannot anticipate how the ACC may adjust consumer electricity rates in light of the proposed project, the potential change in consumer electricity rates is too speculative for inclusion in the EIS.

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On June 4, 2002, the **maximum peak** electric load here reached **58.7 MW**, for only the **sixth time we'd exceeded a 50 MW demand**. I do not know if we've exceed that value since.

The **local generators** in Nogales meet our **backup** supply capabilities **over 99.6% of the time**.

Outage (outage is the amount of time per year that one does not received electricity)

We had **17-transmission outages** (in five years) on the **present 115 kV line**, with just over **10 total hours of outage, or 2.05 hours per year**. The most significant was over **seven** hours when the batteries were dead for the electric starter motor, thus the generators could not be started (now corrected). **More than 8 of these 17 outages were human or procedural errors, not transmission line failures**.

A new transmission line will NOT resolve any of the 2,304 outages between the transmission line substations and customers in the same timeframe. This is very important, because customers DO NOT know how or why they lose electricity. Thus, 99.27% (= 2304/2321) of the "outages" were NOT caused by transmission line failure, but by distribution system failures.

These 2321 outages were significant. Citizens lost a $5.5 million dollar class action suit for having low reliability. The City of Nogales filed a formal complaint to the ACC based on the outages during 1998 and 1999. We were a "basket case." **We had both high distribution and transmission reliability problem**. This environment led to Citizens developing a detailed Plan of Action and a Settlement Agreement with the ACC Staff. We had a reliability problem then caused by poor "wires." Citizens spent millions correcting this by installing over 1,000 new telephone poles, replacing over 60,000 feet of unreliable underground cables, added new substations along the present 115 kV transmission line, installed a modern control system with fiber optics communications and computer display in Nogales so they could monitor the generations supply coming into Santa Cruz County, and other technical improvements. Citizens started "spinning reserve" on its generators when electrical storms were predicted so they could rapidly switch from the transmission line to a local generation source, and even instituted a meaningful training program. **This has resulted in a much-improved system since 1999**.

1

Back on our subject of **"transmission" reliability**, we now have **four substations**. This means the 115 kV line could be proving power in Rio Rico, while the Generators provide power in Nogales. The ability to remotely and automatically "split" the system gives us two sources, **some** degree of **redundancy**, the key to improving reliability.

Citizens in it's Plan of Action, called for a "second" 115 kV transmission line between Tucson and Nogales. The detailed schedule showed **after** all "environmental impacts" would be resolved, including an EIS if necessary, Citizens would **then** file with the ACC for its Certificate of Environmental Compatibility,

Comment No. 3

A smaller transmission line (e.g., 100 MW capacity) in lieu of the proposed 345-kV line would not meet the international interconnection aspect of TEP's proposal and, therefore, is not evaluated in detail in this EIS (refer also to Section 2.1.5, Alternatives Considered But Eliminated From Further Analysis).

Comment No. 4

The alternative of a new power plant in Nogales, Arizona, is evaluated briefly in the EIS (refer to Section 2.1.5, Alternatives Considered But Eliminated From Further Analysis). CEQ regulations (1502.14[a]) only require a brief discussion of the reasons for which alternative were eliminated from detailed analysis, rather than an in-depth analysis (including a cumulative effects analysis). Therefore, the alternative of a local power plant is not included in Chapter 5, Cumulative Impacts. Additionally, Section 5.2.1 of the Final EIS explains that there are no reasonably foreseeable power plant construction or expansion projects in Pima or Santa Cruz Counties to be included in the cumulative impacts analysis.

Chapter 5 of the EIS presents an analysis of cumulative impacts that could occur as a result of the potential impacts of TEP's proposed project when added to impacts from other past, present, and reasonably foreseeable future actions. Where specific information was available on past, present, and reasonably foreseeable future actions, it was included in the EIS; relevant information received from the public during the Draft EIS public comment period was also added to the Final EIS (e.g., information on planned residential developments was added to Section 5.2.4). The Cumulative Impacts Methodology section in the Final EIS has been revised to clarify that the analysis identifies where cumulative impacts may differ among alternatives, and Section 5.3, Cumulative Impact Analysis, has been revised in the Final EIS to more completely assess cumulative impacts.

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its permit to construct a **"backup"** transmission line. That concept is what the ACC thought they were approving when they mandated Citizens to "provide a second transmission line" in November 1999.

Then the "line wars to Mexico" stated.

In December 1998, Public Service Company of New Mexico submitted to DOE a Presidential permit application. This highlighted "transmission lines" to Mexico. **TEP has a negative corporate attitude towards PNM** "moving into its territory." These companies have public disputes, which appear in the news. **TEP did not want PNM in its "own backyard."**

In June of 2000, TEP approached Citizens and opened discussions concerning TEP's participation with Citizens to provide the "backup" line that also would continue to Mexico.

The situation changed significantly on August 17, 2000, with an Application by TEP for a Presidential Permit followed by its Joint Application to the ACC on March 1, 2001.

During the ACC Line Siting Hearings, the 115 kV transmission line was rated at 60 MW. This was of concern and obviously near the peak demand limit for our county.

At that time, we had a **reliability** problem then **due to supply shortages**. The significant outages of 1998 and 1999 had decreased significantly by then. Citizens' system improvements were obvious to customers and they told that to the ACC Siting Committee.

A few months after those hearings, Citizens completed its update on the last 3 miles on the 115 kV line, **now rated at 100 MW. We now have adequate supply capacity and reserve on that line**.

Everyone, including myself, **agrees a "second" line is required**.

The ACC "mandated" a "second line" in 1999:

- not voltage,
- not 12 lines to Mexico,
- not lines through National Forest primitive wilderness,
- not lines that will cost each ratepayer $30 per month for backup power,
- not 140 foot tall towers, when 60 foot tall towers (115 kV) satisfy all requirements.

2

The proposed TEP project could provide up to **100 MW backup power** to Nogales, **no more**, on a **separate 115 kV line. The 345 kV line is ONLY continues through Nogales to Mexico**.

The 345 kV line could be capable of providing the **remaining 1,900+ MW, presently un-Constitutional in Mexico**, for some kind of Mexican electricity trade "in the future" that will **bypass Nogales at the speed of light.**

3

Redundancy improves line reliability, not voltage, height of tower or "company."

1 cont.

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Comment No. 4 ***(continued)***

Also, Table 5.4-1 has been added to the Final EIS to provide a summary comparison of the cumulative impacts by resource area and identify any differences in cumulative impacts for the Western, Central, and Crossover Corridors.

As discussed in Section 5.2, the Applicant for the proposed PNM transmission line project recently indicated that he would be withdrawing his Application for a Presidential Permit. As such, the cumulative impact assessment no longer includes that project.

Comment No. 5

The Draft EIS was prepared in accordance with Section 102(2)(c) of NEPA, the Council of Environmental Quality (CEQ) regulations (40 *Code of Federal Regulations* [CFR] Parts 1500-1508), and all applicable laws, regulations, and agency policies. The Federal agencies have determined that the Draft EIS does not need to be re-issued for additional review. It is noted that the Final EIS contains revisions based on public comments and internal reviews.

Comment No. 6

Outside of the EIS, DOE will assess the impact of TEP's proposed project on the reliability of the U.S. electric power supply system as part of its decisionmaking process (see Section 1.2.2.1, DOE Purpose and Need).

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The present transmission line outage was 2.05 hours (5-year average) per year, reliable 99.977% of the time.

1 cont. For two lines, based on that reliability, transmission failures are 1.72 seconds/year, reliable 99.999945%.

For three lines (ACC requires that power plants have a minimum of two to meet its N-1 rule), transmission outages are 0.000404 seconds/year, reliability 99.9999999997%.

The "ACC mandated" backup line does not have to come from Tucson.

A "local powerplant near Nogales to serve the target area" was mandated as an Alternative by the Department of Energy to be analyzed in the Environmental Impact Statement (EIS).

TEP failed to include the Powerplant Alternative. It did not conform "to their plan."

4 Without another DOE requirement for the EIS, the required "cumulative effects analysis (CEA)" of ALL Alternatives, including both a local Power Plant and PNM Alternatives, for past, present and future impacts, this proposed draft EIS is deficient.

This draft EIS must be re-written with all the required analyses necessary for decision makers. Without this information, how can they make decisions that last generations.

5 I recommend DOE take the NO ACTION Alternative on this project unless major changes are made.

I've included a copy of the computations using standard reliability engineering practice for verification.

TEP has never provided ANY reliability analyses or NUMBERS other than their new towers

6 are "more robust" which missed the critical point, it's redundancy that improves Relability.

Thank you.

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Math Showing Reliability Calculations

The basic equation for combining independent probabilities is to take the sum of the individual probabilities and subtract the product of the probabilities. Two examples are shown, before two and three transmission line computations.

Example 1: Two coin tosses, probably of heads (which is 50% reliable)

P1 = normally success = 50% of the time
P2 = a second line or toss is added, having same 50% reliability
P1 = P2 = 0.5 (or 50% of the time it works)
Adding for a second line P1 + P2 – (P1xP2)
0.5 + 0.5 – (0.25) = 1.0 – 0.25 = 0.75 or 75% of the time it works or you get a head

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Example 2: If, P1 = P2 = 0.9 (ten sided coin, which is 90% reliable)
Adding for a second toss P1 + P2 – (P1xP2)
0.9 + 0.9 – (0.81) = 1.8 – 0.81 = 99.0 % reliable or failure is 1% of the time.

For Santa Cruz County, using Transmission Outage date, where there was an average of 2.049 hours of outage per year (from a five year set of data that includes all the "bad" years with high outage rates)

1 year = 365.25 x 24 = 8766 hours in a year (includes every fourth leap year)

Outage = 2.049 hours / year, therefore 8766 – 2.049 = 8763.951 hours/year without outage

Percent of time without outage or Probability of not having an outage = 8763.951 / 8766 = **99.9766255989 %** without outage, or the reliability of the transmission line.

Note: 1.0 – 0.999766255989 = probability of having an outage = 0.000233744 or 0.0233744 %

With a second transmission line, with same outage rate (could be a bit higher but it's redundancy that's the critical factor, not the reliability of another line)

Adding for a second line P1 + P1 – (P1xP1) = P2 (reliability probability for two lines)

P1 + P1 = 1.999532511978097
P1 x P1 = 0.99953256661

P2 = P1 + P1 – (P1xP1) = 1.99953251197- 0. 99953256661 = 0.99999994536= **99.999994536%** reliable

Outage = 1 – probability of being unreliable = (1.0 - 0. 9999999453) = 00.00000546 % unreliable

(0. 99999994536) x 8766 hr/year x 60 min/hr x 60 sec/min = **1.724 seconds/year** outage for a second redundant transmission line.

for a third line, where P1 = 99.9766255989% reliable (same as P1), so using two line value P2 above and adding a third redundant line gives

P1 + P2 = 0.9997662559890486 + 0.99999994536 = 1.9997662013490486

P1 x (P2) = 0.9997662559890486 x 0. 0.99999994536 = 0.999766201361820

P3 = P1 + P2 – (P1 x P2) = 1.999766201349- 0.999766201361 = 0.9999999999872286 = **99.999 999 9872% reliable with a third line**

(1.0 – 0.9999999999872) x 8766 x 60 x 60 = **0.000404 seconds/year for a third redundant transmission line**

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Comments at Nogales
By Marshall Magruder
PO Box 1267, Tubac AZ, 85646, 520-398-8587

Friday 5-7 PM, 26 September 2003

Good Afternoon, Mr. Como, Mrs. Russell.

I have many comments to make on this proposed draft DOE EIS for the TEP Transmission Line Project. I'd like to address one major area, which involves "**Costs**" this afternoon.

We have several ways to look at cost, but in end, all "**prudent costs**" are **reimbursable** and thus **absorbed** by either the **ratepayers** or **shareholders**. **Utilities**, in general, **prefer to recover all costs from ratepayers**, so that they **maximize** their **returns for shareholders**.

DOE rules are clear, any **imprudent cost is not reimbursable**. I'm going to discuss reimbursable costs but many "marketing" and "sales" costs are not reimbursable as they are the cost of doing business.

First, we have **Transmission Line capital costs**, which include the environmental studies and the cost to TEP for this meeting. This is a reimbursable cost. Thus, TEP is not "losing" money because of doing prudent environmental analysis, they will not have to "absorb" this cost, as this becomes a capital cost. "Capital" costs, in this case, is what TEP spends on this transmission line system. In most industries, capital costs are shareholders responsibilities, because the company wants to grow. The utilities industry, however, at rate cases, argues that capital costs should be absorbed by ratepayers, and consumer advocates, such as our Arizona Residential Utilities Consumer Organization (RUCO), usually takes the side for ratepayers. Ultimately, this is decided but really won't be known for Santa Cruz customers until UniSource Energy Services (UES) or its electric subsidiary, UNS Electricity, Inc, our new electricity company files a rate case in August 2007.

Mr. Pignatelli, UniSource Energy/TEP's CEO and President, was very upset with the ACC when he was told he could not file for these costs in 2005. He also testified that he expects Santa Cruz customers to pay $20 million of the Capital Costs of this system, at $2 to $3 million per year. That's between $11.11 and $16.66 per month (for the 15,000 customers here). In addition, reimbursable costs have interest added, thus this will be higher, which I'd estimate to be **about $15.00 per customer per month**. This is just for Capital, or ownership, of the system.

In addition to what's been testified, the Federal Energy Regulatory Commission (FERC), the "crazies" in DC, have authorized transmission line costs to have a minimum return on investment of 12%. This is "profit" incentives added to the total Capital Costs of the system, reimbursed by ratepayers. Initially, in the TEP ACC Application on page 10, the cost were as follows:

Substation Costs for three substations $9,950,000 (all routes)

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state that any agreement that TEP made with me in that answer won't be decided until August 2007, with interest!

The "Wheeling Charge" is VERY important for TEP, because that is the "toll booth" charge it will make for people using its transmission line. For 1,000 MW of continuous usage, TEP will receive $2,330,000 per month in revenues, with 10% of that from UES. Annually, this is $27,960,000 in wheeling or toll charges. This means the $87.5 million capital costs, from TEP's view, is paid off in 3 years 2 months, a short period and more importantly, after that, ALL the Wheeling Charges (minus operations and maintenance costs, which are, in comparison, minimal) are Profit. So, TEP could make $27,960,000 if it sold "space" on this line. TEP testified during the ACC Siting hearings, it really didn't care what direction the electricity goes, TEO will always collect this charge. With Santa Cruz County paying 10% of this, not to our electricity company, UES or UNS Electricity, Inc, but to subsidize TEP's ratepayers in Tucson.

Third, we have the actual **Electricity** cost. Based on statistics during our most unreliable five year period, we could use a maximum of 2.05 hours of backup power on this line. The new TEP agreement with the PWCC's-Arizona Public Service Company, purchases power for $58.79 per MW-hr. For 2.05 hours, say for 50 MW of demand, we would then spend (58.79 x 2.05 x 50) = **$7,348.75 per year or $0.04 per month per customer for electricity we use from the backup transmission line**.

	Summary Costs for Customers:	
	Capital Cost to own part of the transmission line	$15.00 (includes interest)
	Line use (wheeling charges)	$15.33 (without interest)
1	Electricity cost	$ 0.04 (during outages)
	Total Cost	**$30.37 per month per customer**

Isn't this **excessive costs** for **backup** electricity?

Thank you

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Comment No. 1

After a regulated utility such as TEP constructs a project in Arizona, the ACC determines whether, or to what degree, an investment by a utility is recoverable through consumer electricity rates. Because the Federal agencies cannot anticipate how the ACC may adjust consumer electricity rates in light of the proposed project, the potential change in consumer electricity rates is too speculative for inclusion in the EIS .